

**Gene- diet interactions prevents – obesity.**

Meena P, Neethi Jayan, Sathesh J.

Department of Biotechnology, Sree Sastha Institute of Engineering and Technology, Chennai , India.

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Post Graduate Department of Biochemistry, Dwaraka Doss Goverdhan Doss Vaishnav College, Arumbakkam, Chennai 600 106, India. 7-8 February 2012.

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**ABSTRACT**

The research demonstrates that obesity is a complex disorder with a strong genetic basis and a multifactorial etiology in both adults and mostly the children these days. Yet despite the overwhelming evidence that genes play an important role in the development of obesity, many people argue that the increasing prevalence of obesity is simply due to an abundance of palatable food, a dearth of opportunities for physical exercise and other environmental factors. While activity and eating behaviors contribute substantially to the development of obesity, considering these to be the only etiologic factors is directly contradictory to what is now known about how eating and energy balance are regulated. Genes influence every aspect of human physiology, development, and adaptation. Obesity is no exception. The basic knowledge of the molecular processes controlling eating behavior, in particular, has accelerated exponentially in the last 10 years, and this is one area in which obesity genetics has made great progress. The search for human obesity genes began several decades ago. Genetic variation may interact with behavioral factors to influence the regulation of body weight and adiposity. Although exercise and diet strategies are used routinely for obesity treatment, there is a huge variability in how individuals respond to these interventions. There is also a substantial amount of evidence that such responses may also be regulated by genes. Thus this is one of the way by which we can cut down the growth in the increased obesity rate in our country. More research is needed to identify the genes responsible for these interaction effects, and the use of animal models of diet-induced obesity represents a promising approach. Data on children are needed to allow assessment of the tracking of nutrient intake between childhood and adulthood.